



Naturally Yours

Now Available: New Rare Plant Fact Sheets



Natural and Protected Areas has produced two more fact sheets in its series on Alberta's Rare Plants. Fact sheet numbers 6 and 7 refer to big sagebrush (*Artemisia tridentata*) and western spiderwort (*Tradescantia occidentalis*), respectively.

Big Sagebrush

Big sagebrush is one of only two shrubby sagebrush species found in Alberta. The general form resembles that of sagebrush (*Artemisia cana*) but it can be distinguished by its habitat and three-toothed leaves. Big sagebrush is found only in the montane and subalpine regions, typically on south- and southwest-facing slopes that have poorly developed soils with good drainage, whereas sagebrush is found in the dry prairies.

Big sagebrush occurs in just a few places in the extreme southwestern corner of Alberta and is considered rare because of its restricted distribution. The plant communities in Alberta that are dominated by big sagebrush are unique, being distinct in the grouping of species found there from big sagebrush-dominated

sites in British Columbia and the western United States.

Big sagebrush has become a valued nursery plant because of its extensive use in landscaping. Removing plants from their natural habitat for such a purpose is one of the biggest threats to big sagebrush populations and their associated, unique plant communities.

Even though big sagebrush is common elsewhere, there is value in conserving this species in Alberta. Species occurring at the edge of their ranges, as this plant does, often have a different genetic makeup than do populations in other parts of each species' range. Maintaining different gene pools is essential for the long-term survival of the species in the wild. Big sagebrush and the plant communities dominated by it are an important part of the diversity of Alberta.

Western Spiderwort

Western spiderwort seems to grow best in partially stabilized areas between sand dunes. Although such habitats have probably never been extensive, the number of active dune areas has been reduced to even lower levels, likely because of the suppression of wildfires.

In Alberta, western spiderwort has been confirmed at only one location, the Pakowki Lake Sand Hills. In Canada, it is known from three additional sites, two in Manitoba and one in Saskatchewan.

Because western spiderwort is a species of limited distribution and requires a specialized habitat that seems to be decreasing, it is probably endangered in Canada.



more Rare Plant, page 2

Milk River
Update

J. Gould, Natural and Protected Areas

Milk River Natural Area (5344 ha) and Kennedy Coulee Ecological Reserve (1036 ha) are located within the Mixed Grassland Natural Region of the province. The importance of these areas is due to a combination of significant cultural and natural features.

It has been almost two years since the first draft of the Operational Management Plan for Milk River Natural Area and Kennedy Coulee Ecological Reserve was completed. However, protection of the area has been an issue for almost 20 years.

The Milk River Management Committee consists of five government and six nongovernment members and the local MLA Alan Hyland (ex officio). The committee has had to deal with some very contentious issues but all members put aside their personal biases so that they could work together to accomplish the goal of protecting the site.

more Milk River, page 3

Questionnaire

This issue of *The Steward* has a brief questionnaire on the future of the Natural and Protected Areas Program. We need your ideas! Please fill out the questionnaire and send it back as soon as you can. The first 30 respondents will receive our new book, *Alberta's Natural Areas: A Guide to Selected Sites*.

Your input will help us to more effectively plan and manage Natural Areas now and for the future.

What Can You Do?

There are several things individuals can do to help ensure the survival of these rare/endangered plants in Alberta:

1. If you find a population of these plants, please inform the Natural and Protected Areas Section, Alberta Forestry, Lands and Wildlife. This information will be put into a database on rare plants and used to help conserve the species and its habitat.
2. Never dig up or collect these plants. If you are unsure of its identification, take pictures or ask the assistance of someone familiar with the species.
3. Any plants that are available for purchase may have been collected from the wild. Purchase only those plants that are nursery-grown from seeds or cuttings.
4. Avoid disturbing the populations.

Rare Plant Database

Natural and Protected Areas staff have been collecting information on rare/endangered plants for a number of years. This information is being put into a database format (dBase IV) to permit easy access to wide ranges of information. Examples of the type of information we will be able to access very quickly include knowing which, if any, rare plants occur on a parcel of land; where all of the populations of a certain rare plant are and which rare plants are associated with specific habitats. We hope to plot this information onto maps.

If you are interested in obtaining copies of Alberta's Rare Plant Fact sheets or want more information on the rare plant database, please call Lorna Allen or Joyce Gould, Natural and Protected Areas, 427-5209.

Bird Atlas

The Alberta Bird Atlas Project, an undertaking of the Federation of Alberta Naturalists, has involved almost 1000 volunteers gathering data for five years on the breeding birds of Alberta. This project is now nearing its culmination, the publishing of *The Atlas of Breeding Birds of Alberta*. It has received substantial support from organizations such as Alberta Fish and Wildlife Division, Canadian Wildlife Service, The Provincial Museum of Alberta and the Recreation, Parks and Wildlife Foundation.

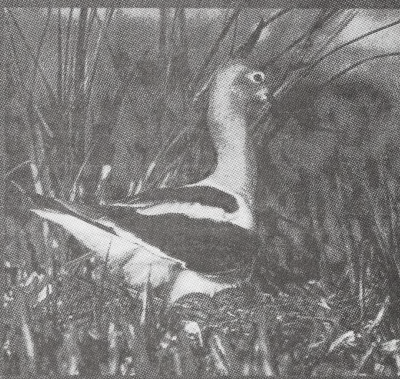
The publication will prove its worth many times over for a multitude of applications such as environmental assessment and wildlife management. It will also be a valuable reference tool for educators, professional biologists and naturalists.

The book itself will be a hardbound 400-page volume including stunning colour photographs from several of Alberta's top wildlife photographers. The majority of the photos will show the bird at its nest. As well, the distribution of over 250 breeding birds will be overlaid on the natural regions of the province, visually demonstrating the influence of habitat on distribution. These factors alone will make the book an attractive addition to any collection.

In addition to the species accounts, the book includes a history of ornithology in Alberta, a description of the natural regions of the province, a methodology and an extensive bibliography. There are also appendices listing common migrants and other interesting subjects.

The Federation of Alberta Naturalists wishes to extend to all its supporters, an invitation to take advantage of a pre-publication discount as outlined below. FAN will accept cheques, money orders or VISA orders. Please order early to take advantage of these savings.

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Milk River

In June 1990, the committee held its first meeting, which was to discuss the first draft of the plan that had been prepared by the Public Lands Division of Alberta Forestry, Lands and Wildlife. The draft plan was presented to the public in February, 1991 and then revised based on the public's input. The portion of the plan on the Natural Area was endorsed in June 1991 and that on the ecological reserve in April 1992. The joint signing of the plan by the Ministers of Forestry, Lands and Wildlife and Tourism, Parks and Recreation is anticipated in the very near future.

The Milk River site is representative of the Mixed Grassland Natural Region. The overall goal, or vision, for the site is to protect and maintain its ecological and aesthetic character, with minimal human interference. This vision provided the overall framework around which the management decisions for both the Natural Area and ecological reserve were made.

Grazing Essential

Grazing is an essential component of the grassland ecosystem. Historically, large herbivores such as pronghorn and bison were found in this area. Their grazing habits resulted in a patchiness—some areas were heavily grazed, others ungrazed and still others received a moderate amount of use.

Today, domestic cattle have replaced bison. Their grazing patterns do not entirely mimic bison but, at Milk River, we have tried to develop a grazing strategy that provides some patchiness. Under this strategy, Kennedy Coulee Ecological Reserve serves as a core area, providing habitat for plant and animal species associated with taller grasses and greater levels of litter. Milk River Natural Area provides a diversity of habitats for plant and animal species associated with either short or tall grasses.

Long-term Monitoring

The committee initiated a long-term monitoring program before cattle were placed on a portion of the site in June 1991. This program is strongly linked to the management plan and will guide strategies for grazing. The ecological reserve, which is ungrazed, is serving as the control against which the effects of management activities will be measured. The results of the program will be used to determine the need for grazing, and the effects of grazing on plant and animal communities and on rare species and their habitats.

At the present time, we are monitoring the following for any effects from grazing: vegetation, populations of two nationally and provincially rare plants, breeding birds, small mammals, northern leopard frog (proposed for designation as an endangered species), nesting birds of prey and short-horned lizard. The monitoring program is a cooperative effort with assistance coming from Alberta Forestry, Lands and Wildlife, World Wildlife Fund Canada, consultants, academics and volunteer stewards. The monitoring program will be expanded depending on availability of funds.

Data Collection

The stewards are also actively collecting additional information on features of the site. Such information will be used in management. All monitoring data are being housed by the Natural and Protected Areas Section where it is being put into a database and linked to a Geographic Information System (GIS).

Wildfire is another essential component of the grassland ecosystem. At the request of members of the local community, wildfires will be suppressed. Prescribed burning, under strict conditions and upon consultation with the local community, may be considered in the future. Now when wildfires occur, the committee and volunteer stewards document the response of the vegetation and selected species. This information will be used to develop any future fire management plans.

The nongovernment members of the Milk River Management Committee are a registered society entitled the Milk River Management Society, and have been issued a Recreational Lease for the Natural Area. This enables the society, as members of the public, to have an active role in managing the area. The society has a contract with a local rancher to graze the area under very specific conditions outlined in the plan. All monies received by the society from the sale of grass are put back into the management of the site. For example, the monitoring program is funded, in part, by the proceeds from grazing.

Many Contribute

We must recognize the efforts, specifically toward ensuring long-term protection for the area, that were taken by the predecessors of the Milk River Management Committee, i.e., members of the Milk River Task Force, interested agencies and members of the general public. We must also recognize the local ranchers whose management over the years has been instrumental in conserving the Milk River area as one of the best

representations of a native grassland ecosystem in North America.

Highlights of developing and implementing the plan include:

1. The drafting of the management plan with members of the public was a productive and positive process;
2. The Operational Management Plan for Milk River Natural Area and Kennedy Coulee Ecological Reserve is the first joint plan for an ecological reserve and Natural Area;
3. This is the first management plan for an ecological reserve to be signed by the Minister of Tourism, Parks and Recreation;
4. This is the first long-term monitoring program for an ecological reserve or Natural Area in Alberta that is aimed at documenting the effect of management activities and at providing future management direction;
5. Members of the public are actively involved in the management of the site through the formation of a society and issuance of a recreational lease; and
6. The volunteer stewards are actively involved in the monitoring program.

Milk River Management Committee

Cliff Wallis - Alberta Wilderness Association

Leonard Mitzel - County of Forty Mile

Jim Clark - Fish and Wildlife Division

Ken Kultgen - Foremost Fish and Game Association

Alan Hyland - Member of the Legislative Assembly (Ex Officio)

Joyce Gould - Natural And Protected Areas Section

Terry Hood - Public Lands Division

William King - rancher

Ian Dyson - Regional Coordination Services

Mel McCaugherty - Southern Alberta Environmental Group

Doug Ohrn - Tourism, Parks and Recreation

Alex MacDougald - rancher

Volunteer Stewards

Lee Finstad - landowner from local area
Dale Baumbach - Lethbridge Naturalists' Society

Allen Herbst - Taber Canoe Club

Ivan Shukster - Grassland Naturalists

Conservation - A Way of Life for Edgar T. Jones

Edgar Thompson Jones loves nature and the outdoors. Approaching 70 this year, his accomplishments are numerous and his energy and vitality are amazing.

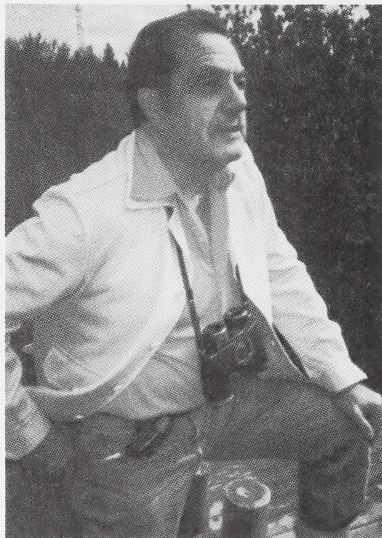
Edgar's passion for nature is evident in all areas of his life. He is a world renowned wildlife photographer, a talented painter, and one of Canada's top bird banders. Assisted by his wife Jeanne, he banded over 5600 birds last year alone. Edgar is active in many community groups, lectures on conservation and is a knowledgeable resource on identifying birds, and bird banding (among other topics). Over the years, he has dedicated many hours to encouraging young people to appreciate our flora and fauna and become involved in conservation, especially wildlife conservation.

"One of the best things people can do is get involved," says Edgar. "If each individual considers the environment and the country when making decisions, we can protect the resources we have. It's as simple as if each person picked up a piece of litter a day, we wouldn't have a litter problem after a while."

Edgar's enthusiasm and love for the outdoors began as a child. His father, Harry E. Jones, was a talented landscape artist and would take Edgar with him while he painted. On these trips, Edgar would bird watch or search out road kills to use as models for his own sketching and painting. He became interested in taxidermy and, in 1941, when he turned over his work to the University of Alberta, Department of Zoology, he had amassed an extensive collection of eggs and scientifically prepared skins.

Edgar was a pilot in World War II, for which he was awarded the distinguished flying cross and bar. After the war, Edgar had a bush plane charter service, McMurray Air Services Ltd. and it was to record his planes in action that Edgar started shooting 16-mm films as a hobby in 1948. In 1959, he chose to pursue this hobby full-time and went on to produce wildlife films in places as far away as Rhodesia, Australia and Costa Rica. He has been involved with more than 200 nature television shows, including *Adventure Outdoors*, which won the Gold Award in 1981 as the best wildlife series in Canada. Wanting Canadians to get the most benefit from his work,

Edgar sold more than 46,025 m of 16-mm film, all his stock footage, to CBC in the late 1980s. For the cost of the film, he also sold his slide collection of more than 14,000 slides to the Provincial Museum of Alberta. He has published photos from these slides in many books. Edgar's slide collection, representing 400 species of birds, mammals, flowers, trees, mushrooms and insects found in Canada, will be used by the museum to promote public awareness and education.



Edgar has lectured extensively throughout the United States for the National Audubon Society, promoting Canada and its natural history. He has led wildlife observation tours to Africa, Australia, the Canadian Arctic, New Zealand, South America and the Galapagos. He was a founding member of the Edmonton Bird Club in 1948 and has been a member ever since. Edgar co-founded the Alberta Wildlife Foundation, which was established to promote conservation throughout Alberta and operated until 1984. Today, the Recreation, Parks and Wildlife Foundation carries out much of the work envisioned by Edgar and the Alberta Wildlife Foundation.

It was through his involvement with the Alberta Wildlife Foundation that Edgar originally became involved with the Wagner Natural Area. Back in the 1950s, he was very influential in conserving Wagner, and has been involved

with its conservation ever since.

"Wagner is a unique piece of ground," said Jones. "I felt early on that the bog and surrounding area should be preserved, so I did what I could to make it happen."

Edgar notes that anyone involved with conservation has to be an optimist. "You do what you can to save what you believe in. And if you can convince one more person along the way that what you are concerned about is worth their concern, you've made your efforts worthwhile."

NOTE: "The Natural Areas program recently acquired important conservation lands on the east shore of Hastings Lake in the County of Strathcona. This property had been owned by Edgar T. Jones and this year will be designated the EDGAR T. JONES NATURAL AREA by the Government of Alberta."

Edgar Jones Receives First Wagner Recognition Award

Local naturalist, conservationist and wildlife photographer Edgar T. Jones was presented the Wagner Natural Area Society's first Recognition Award, an engraved plaque. A recent idea on the part of the society, the award honors individuals who have given or are giving outstanding service to the conservation of the Wagner Natural Area.

Jones has frequented the Wagner peatland since the early 1950s. He quickly came to appreciate the area's unusual natural features and biodiversity, and began to lobby for its preservation. Jones influenced William Wagner, the farmer who owned the "Wagner Bog" until 1971, to leave the land intact. He persistently sought funds to purchase the property during the '50s and '60s, both as an individual and as a member of the Alberta Wildlife Foundation (AWF). He finally met with success in 1971 when, with the help of fellow AWF member Bill Morgan, the Wagner property was bought by the Alberta government.

Jones, who lives in Edmonton and still travels extensively on wildlife projects, has been a director of the Wagner Natural Area Society almost since its inception in December 1982. He presided at a special designation ceremony in October 1983, attended by then Energy and Natural Resources Minister Don Sparrow, at which the society was presented with its 21-year lease to the Natural Area. One of Jones' latest conservation efforts was in July, last year, when he helped take yellow lady's-slippers growing on the road right-of-way and transplant them to the central meadow alongside the Marl Pond Trail. A large marl pond in the centre of the Natural Area, Jones' Pond, is named after him.

A Key to Reptiles of Alberta

The reptiles of Alberta are a diverse group of organisms in the class Reptilia. Reptile comes from the Latin word *reptilis*, which means crawling animal. Alberta has eight native reptiles: six species of snakes and one species of lizard in the order Squamata, which name refers to their scaly bodies; and one species of turtle in the order Testudines, from the Latin for tortoise.

To use this key

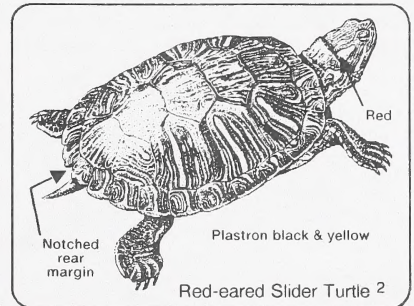
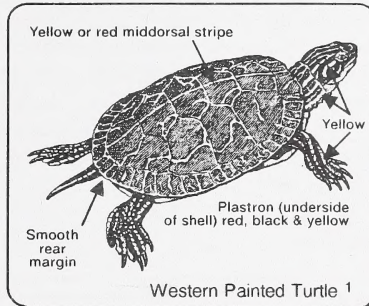
The native species of reptiles in Alberta are few and are easy to identify in their native surroundings. It is, however, useful to have one of the creatures you are trying to identify "in hand." Starting at point number one, read each of the options and choose the one which best fits the characteristics of the reptile you are observing. Proceed to the next couplet as directed until you reach a description that provides a species name. The key and range maps were prepared by Wayne Roberts, Collections Manager, University of Alberta Museum of Zoology. An explanation of technical terms, definitions (in parentheses) and sketches were added to the original text. Where more than one piece of descriptive information occurs in a couplet the first item alone will allow the reader to identify a snake "in the grass." Illustrations in this article are from Amphibians and Reptiles of Western North America by Stebbins, 1954.

1a. Body lacking scales (See "A Key to Amphibians of Alberta" in the April 1992 issue of *The Steward*)

1b. Body covered with scales ... (2)

2a. Limbs present (3)

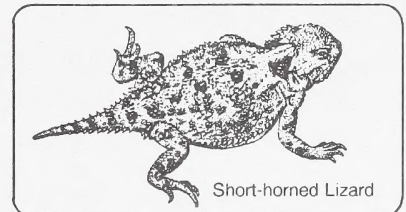
2b. Limbs absent (4)



TURTLES and LIZARDS

3a. Body covered by carapace (shell) WESTERN PAINTED TURTLE (*Chrysemys picta*)

3b. Body lacks shell but skin possesses spines and tubercles SHORT-HORNED LIZARD (*Phrynosoma douglassi*)



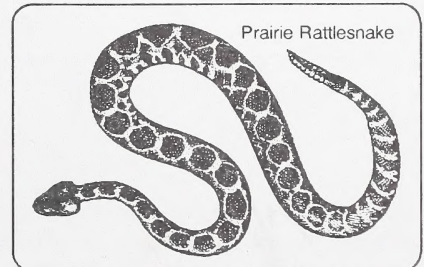
SNAKES

4a. Rattle or button on end of tail PRAIRIE RATTLESNAKE (*Crotalus viridis*)

4b. Rattle or button absent (5)

5a. Body usually with one middorsal and two lateral stripes, scales in 19-21 rows (6)

5b. Body without stripes; scales in 25 or more rows (8)



Footnotes

- 1 There are far more sightings of painted turtles outside the known range than there are within the range, because pets have been released in many areas throughout the province.
- 2 Red-eared sliders (*Pseudemys scripta*) are not native to Alberta but are the dominant species in the pet trade and occasionally are released to the wild.

Reptiles, continued from page 5

- 6a. Back of snake appears olivaceous in colour, no black markings on upper labials (scales on upper lip), middorsal stripe yellow (may be faint, broken or indistinct) WESTERN TERRESTRIAL GARTER SNAKE (*Thamnophis elegans*)



Western Terrestrial
Garter Snake

- 6b. Back of snake appears blackish, black markings present on upper labials, distinct middorsal stripe (7)

- 7a. Middorsal stripe orange, distinct black marks on upper labials, lateral stripe on third and fourth rows of scales PLAINS GARTER SNAKE (*Thamnophis radix*)



Plains
Garter Snake

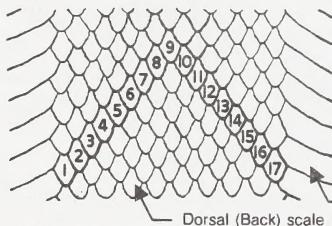
- 7b. Middorsal stripe yellow, black marks (if present) on upper labials indistinct, lateral stripe on second and third rows of scales. Orange and red blotches may be present above lateral stripes RED-SIDED GARTER SNAKE (*Thamnophis sirtalis*)

- 8a. Snout upturned and shovel-like WESTERN HOGNOSE SNAKE (*Heterodon nasicus*)



Western
Hognose Snake

- 8b. Snout not modified to form a shovel BULL SNAKE (*Pituophis melanoleucus*)



To determine the location of lateral and middorsal stripes, you must first count the scale rows. One method is to count diagonally from the ventral scale to the midline of the back and then diagonally back to the ventral scale on the other side of the snake. Counting should be done as near to the midbody of the snake as possible.

Dorsal (Back) scale
Ventral (Belly) scale

Caution: When in rattlesnake country keep in mind the following points:

DO NOT

- handle injured or dead rattlesnakes
- lift any object or reach into any holes
- move if a rattlesnake sounds off suddenly, until you know where the snake is — then move away

DO

- watch where you are walking
- examine the area before you sit down to rest
- stay in open areas
- prod grasses or bushes before entering them to allow any snakes to move away.

REPTILES RANGE MAPS

Roberts 1991



Western Painted Turtle
Short-horned Lizard



Western Terrestrial Garter Snake
Western Plains Garter Snake



Western Hognose Snake
Bull Snake



Prairie Rattle Snake
Red-sided Garter Snake

Please fill out and return this form to: Natural and Protected Areas, 4th Petroleum Plaza South, 9915 108 Street, Edmonton T5K 2C9. The first 30 respondents will receive a FREE copy of Alberta's Natural Areas: A Guide to Selected Sites.

Natural Areas 2000

An Action Plan for One Component of Alberta's Protected Areas

As we approach the end of one millennium and enter another, we have an opportunity to reflect on where we are and where we want to go with Alberta's Natural Areas. Natural Areas are publicly-owned. We need your ideas to effectively plan and manage these precious sites now and for the future.

What do you think an action plan for Natural Areas should contain? Following are some questions to consider. Please write your comments on these or other questions/ideas and return this page - or add more pages of comments. We want to hear from you!. Your responses will be reported in the next newsletter.

New Natural Areas by the year 2000?

Do you think we should continue to establish new Natural Areas? How many? How big? Where? What types? What purposes do they serve? Is there a need for them when we have provincial parks and other kinds of protected areas? What do we do about competing land-use interests on potential new sites?

How should Natural Areas be managed?

Should recreation use be encouraged or just tolerated? What about 'ecotourism'? Are more regulations needed? What features need to be monitored and managed for in the long term? How do we handle resource use interests in Natural Areas - absolute no or site-specific management?

Who should do what?

To what extent should the public be involved in nominating sites? Managing sites? What authority should volunteer stewards have? Should industry have a strong role - if so, what should it be? What do you want us - the program staff - to be doing?

Other ideas?

If you are unfamiliar with Natural Areas, we have several publications available that you can receive by contacting our office. Let us know your thoughts - send us your responses as soon as possible! We will also be consulting with other government staff and agencies and will finalize an Action Plan for Natural Areas by next spring!

What are Natural Areas?

Natural Areas are protected public lands, set aside with the main objective of maintaining their natural features. Their management emphasizes public appreciation, education, research, and/or recreation when this is compatible with the main objective. Natural Areas are divided into three categories: Education, Recreation and Conservation, but in many cases a site may fit into more than one of these.

What is the history of Natural Areas?

Lands were first reserved for Natural Areas in 1963. Then, as a Canadian centennial project in 1967, nearly 150 nominations for Natural Areas were made by academic, government and public sources. In 1971, the first Natural Areas were set aside by the legislation under the Public Lands Act in 1981; legislation for Natural Areas was incorporated in the Wilderness Areas, Ecological Reserves and Natural Areas Act.

How are Natural Areas selected?

Sites are selected using these criteria: special biophysical

features and diversity, public interest, minimal existing disturbances and dispositions, accessibility, proximity to user groups, user requirements, and local availability of other sites. Because management goals vary with Natural Areas, there are special exceptions. For example, for a Conservation Natural Area protecting a unique geological feature or rare plant, neither accessibility nor proximity to user groups would be factors in selection.

Where are Natural Areas?

Natural Areas are located throughout Alberta, but Recreation, and especially Education Natural Areas are concentrated within the settled portions of the province. Most are within 80 km of Edmonton, Red Deer or Calgary.

Who uses Natural Areas?

Natural Areas are selected primarily for local use, but also for scientific research and for meeting Alberta's conservation objectives with regard to protection of habitats and rare or special biophysical resources. The uses allowed on each Natural Area vary and are

designed to meet the needs of the public and to ensure the long-term protection of the site. In general, casual recreationists such as cross-country skiers, snowshoers, hikers, hunters, fishermen, berry-pickers, bird watchers, photographers, horseback riders and nature observers are encouraged to use Natural Areas--with care. Schools and organized groups using Natural Areas for outdoor education, recreation or training exercises are also welcome. Several interested groups have already incorporated as societies in order to acquire a recreational lease or licence of occupation for the specific use of a designated Natural Area.

Why are Natural Areas important?

The rapidly accelerating pace of development makes it imperative to protect and preserve public lands with scenic value, natural habitat, recreation value, unique characteristics, or diverse biophysical habitats. This will ensure the continued availability of these areas for present and future generations of Alberta.

La Saline

by Lorna Allen

One winter day, in 1982 I think, a report and some air photos were plopped on my desk and I was given a mission — to find and inspect the tufa mentioned in the report. "What," I wondered, "is a tufa?" Whatever it was, a curious white spot on the banks of the Athabasca River clearly showed up on the air photos. "Hmmm," I thought, "that looks interesting." As it turned out, the white dot was the tufa, and it was **very** interesting.

A tufa is a buildup of calcium carbonate. As springs flow underground over limestone, the limestone combines with carbon dioxide in the water and dissolves to form bicarbonate. But when the flow surfaces, the carbon dioxide is lost to the air, leaving calcium carbonate. This will not dissolve in water so it is left behind (or precipitates out) as tufa or travertine.

Tufas are not unusual, but the one on the Athabasca River is unusually large, forming a cone 3 m across. Several springs surface



Photo by Kevin Timoney

here; the main one is called La Saline Springs. It bubbles up and forms a clear blue pool in the centre of the tufa cone. From the pool, the water spreads out and flows across the cone, down the side and into Saline Lake, leaving a trail of white tufa. The water is **very** saline and as it flows over the cone it also leaves a variety of crystal types behind. In one area, a spring with a high sulphur content emerges, leaving a trail of yellow residue. In another, bitumen (the tar sands) oozes out of the bank, forming a black, sticky flow that moves slowly downslope in hot weather.

The tufa cone is essentially bare of plants. The highly saline, constantly changing environment is a very difficult one for plants to live in. But a few hardy species, called halophytes (or salt loving plants), can survive in this harsh habitat. Many of the species found here are unusual for the boreal forest; some are provincially rare.

Below the springs is an oxbow lake, which was once a channel of the Athabasca River, but is now cut off. The lake provides an important resting area for birds migrating along the Peace-Athabasca River on their way to the Athabasca Delta in spring and returning south in the fall. In summer, many pairs of waterfowl nest around its shores.

An interesting and unusual spot, La Saline Natural Area.

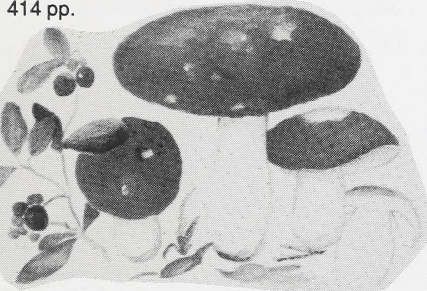
Facts About La Saline Natural Area

- located 40 km north of Fort McMurray on east side of Athabasca River
- best access is by boat along the river
- size: 292 ha
- Order in Council Natural Area

Book Review By S. Abbott

Mushrooms of Western Canada

By Helene M.E. Schalkwijk-Barendsen. 1991. Lone Pine Publishing, Edmonton. 414 pp.



I have recently had the pleasure to review this fine addition to the wealth of mushroom field guides currently available in North America. This is the first field guide to deal exclusively with fungi from western Canada, although the book will also be useful in adjacent regions of the United States and across northern Canada. The format of the book is appropriate for a field guide, being soft covered and reasonably compact. The most striking feature of the book is the quality of illustration. Water colour illustrations of 550 species were painstakingly prepared by the author based on sketches and paintings of mushrooms collected in western Canada. The time and care devoted to the illustrations

is obvious, and the publishers have done an exceptional job preserving the realistic colours of the original artwork. The illustrations are grouped in plates by family at the front of the book. Each plate is accompanied by a list of illustrations denoting both the common and scientific names, as well as a brief description of the pertinent identifying features of each mushroom. All illustrations are also cross-referenced to the complete descriptions found in the second half of the book. The provided descriptions are relatively brief, but all diagnostic features of each species are provided. No details of the spores are provided with the exception of spore print colour. Although details of size, shape and ornamentation of the spores are often unavailable to mycological naturalists, these features may be of great value in separating closely related species, and are missed in the otherwise comprehensive descriptions. The notes concerning edibility, habitat and distribution found in the descriptions of species are useful and informative. The etymology of the species names is provided and is a tremendous asset to the understanding of these often lengthy and otherwise meaningless names. In fact, the common names chosen for this volume often reflect a literal translation of the scientific names. This book is unique in its treatment of many small, inconspicuous species of gilled mushrooms. These fragile but beautiful species are typically ignored in

most field guides or are lumped under the uncomplimentary heading "little brown mushrooms". These small species are clearly a passion of the author, and mycologists throughout Northern America may finally find a name for their less conspicuous collections. How many other field guides, for instance, include *Marasmius epiphyllus* or *Tubaria conspersa*? As is the unfortunate trend with most field guides, the Ascomycetes and other non-gilled fungi are somewhat under-represented. The terminology used throughout the book is straightforward and the reader is not overwhelmed by a plethora of unfamiliar terms. No mushroom manual can completely escape the necessity for "fungal jargon", and an illustrated, as well as a written, glossary is provided for clarification of terms. There are no extensive keys to the species included in the book, but the "keys to colour illustrations" provide an effective means of finding the section of the book to which individual mushrooms belong. The treatment of mushrooms from a previously neglected region of Northern America coupled with the unique assortment of species included and the exceptional artwork, clearly justify the inclusion of this book on any avid mycologists bookshelf.

Sean Abbott is a mycologist working at the Devonian Botanic Garden and a member of the Edmonton Mycological Club. for information on the Edmonton Mycological Club contact Steve Davies at 444-0538.



CONSERVATION AND MANAGEMENT STRATEGY FOR RIPARIAN FORESTS IN SOUTHERN ALBERTA

Poplar forests along southern river systems are important to Albertans for a number of reasons. These forests provide recreation areas, wildlife habitat, aesthetic landscapes, agricultural uses and improved water quality. They also offer cultural and spiritual benefits. If the requirements for these forests are not considered in water and land use planning, these forests can be lost. The Conservation and Management Strategy for Riparian Forests in Southern Alberta was prepared as a result of growing concern about the loss of these forests as well as in response to a recommendation in the Prairie Conservation Action Plan.

The riparian forests conservation strategy was developed under the Prairie for Tomorrow Program (a joint venture between World Wildlife Fund Canada and the Fish and Wildlife Division of Alberta Forestry, Lands and Wildlife aimed at conserving prairie and parkland in Alberta). Prairie for Tomorrow retained Western Environmental and Social Trends, a research firm, to compile information on the current distribution and density of riparian forests in Alberta. Historical trends, factors affecting replenishment, survival and the conservation biology of riparian forests were also studied.

Management Options

To determine management issues and options, interviews were held with concerned groups and individuals involved in the conservation and management of riparian forests.

Based on this research and feedback, the Conservation and Management Strategy for Riparian Forests in Southern Alberta was written. The strategy includes goals that address the issues and challenges of conserving and managing riparian forests in southern Alberta. Objectives and specific actions are identified for each goal. The strategy is aimed at assisting government and nongovernment organizations in conserving and managing riparian forest communities in southern Alberta.

For information on how you can obtain a copy of the strategy, please call Joyce Gould, Natural and Protected Areas, Edmonton, 427-5209 or Jim Clark, Fish and Wildlife Division, Lethbridge, 381-5281.

Financial assistance for the project was provided by the Recreation, Parks and Wildlife Foundation.

Ecotourism and Protected Areas

The preferred type of tourism for protected areas is ecology-based or ecotourism. The term ecotourism was coined by Hector Ceballos-Lascurain in Mexico City in 1983. He defined it as "travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations found in these areas."

Ecotourism is a rapidly increasing segment of the tourism sector. Providing an economic incentive for protecting environments and wildlife has also proven to be a powerful conservation force in many parts of the world. In the 1990s, as increasing numbers of visitors and their demand for services and facilities continue to stress protected areas, the term ecotourism has become synonymous with a preferred ethic and higher environmental awareness among tourists. The term signifies a more environmentally friendly side of the spectrum of wildland (green) tourism, and has become the preferred model for both visitors and tourism developers.

The following eight characteristics of modern ecotourism have recently been described by Dr. Jim Butler of the University of Alberta:

1. It must **promote positive environmental ethics** by bringing about environmentally friendly behaviours in its participants.
2. It **does not degrade the resource**. There is no consumptive erosion of the natural environment visited. While sport hunting and fishing may be counted under the broad heading of wildland (green) tourism, they are classified under the division of adventure tourism rather than ecotourism.
3. It **concentrates on intrinsic rather than extrinsic values**. Facilities and services may "facilitate" the encounter with the intrinsic resource; they never become attractions in their own right, nor do they detract from the natural attraction itself.
4. It is **centered on the resource not on the tourist**. Ecotourists accept the environment on its terms, not expecting to change or modify it for their convenience.
5. It **must benefit wildlife and the environment**. These "benefits" to the environment (not just people) may be measured on a range of scales: social, economic, scientific, managerial or political. If the environment has not at least achieved a net benefit toward its sustainability and ecological integrity, then the activity is not ecotourism.
6. It is a **first-hand experience with the natural environment**. Movies and zoological parks are not an ecotourism experience. Visitor centres and interpretive slide shows are included when they direct people toward a first-hand experience.
7. It has an **"expectation of gratification"**. Gratification is measured in terms of education and/or appreciation, rather than in thrill-seeking or physical achievement, which is more characteristic of adventure tourism.
8. It is characterized by **experiences that increase awareness or stir emotions**. Ecotourism involves a high level of preparation and knowledge from both leaders and participants, and the satisfaction derived from the experiences is felt and expressed strongly in emotional and inspirational ways.

(adapted from *A Protected Areas Vision for Canada*, Canadian Environmental Advisory Council, 1991, c/o Environment Canada, Ottawa).



In sympathy

We were sad to hear that Earl Dicknoether, volunteer steward for Chedderville, passed away on March 19, 1992. Our sympathy goes out to his wife, Doris, and family.

Site Activities

March 1, 1992 - May 1, 1992

1 Parkland

21 Dunvegan

55 Bilby

69 Redwater

71 North Bruderheim

88 Hindville

117 Cow Lake

128 Lily Lake

140 Round Valley

142 Wagner

176 Upper Mann Lake

212 Sherwood Park

221 Kilini Creek

224 Genesee

242 Strawberry Creek

274 Anderson Creek

275 Coyote Lake

290 Buck Lake Creek

304 Drayton Valley

328 Bear River

337 Lac La Biche Islands

396 Spruce Island Lake

412 Milk River

430 Neerlandia

432 Pine Sands

- hand brushing of easement right-of-way approved
- seismic restricted to hand-strung lines with limited limbing of trees
- garbage reportedly dumped
- militia training exercise
- approval renewed for Department of National Defense helicopter training on site
- prairie 3D Archery championships authorized (July 18, 1992)
- seismic approved
- spraying program for weed control on parking area approved
- seismic rejected
- sand and gravel pit rejected
- benches and boardwalk materials acquired for Cabin Trail
- grazing disposition rejected
- boundary flagged for fencing project
- application for water licence to withdraw water from Kilini Creek for golf course; more information requested from proponents
- seismic rejected
- mechanical clearing of right-of-way approved
- site split into Anderson Creek (274) and Wilson Creek (524)
- permission given to remove beaver dam that was causing flooding on adjacent property
- manual brush control on easement right-of-way approved
- wellsite approved, two pipelines approved
- gun range proposal rejected
- site split: Black Fox Island (540), Shorty's Island (544), Lac La Biche Islands (337)
- access road to abandoned wellsite to be blocked
- small mammal research project approved
- name of site changed to Vega Natural Area
- easement right-of-way for pipeline expanded because of erosion problems

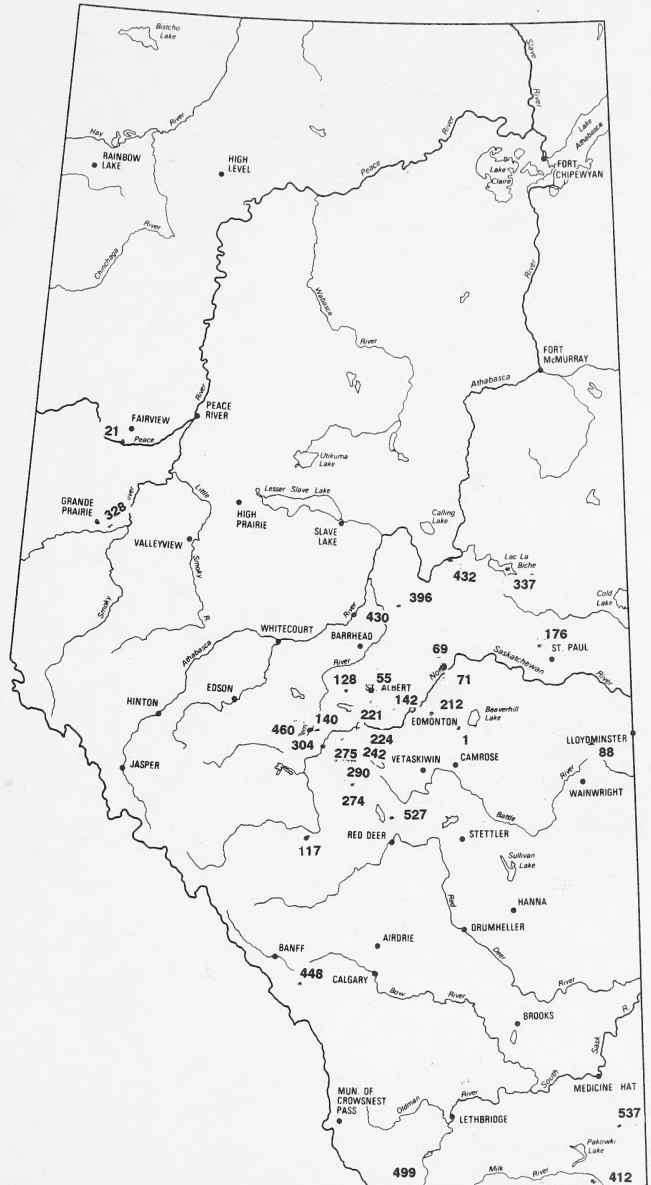
448 Mt. Lorette

499 Outpost Wetlands

527 Braithwaite

537 Eaglenest

- site transferred to Kananaskis Country administration
- unauthorized grazing reported; fence to be installed
- dumping of animal feed concentrate reported; Alberta Environment completed cleanup
- leopard frog project approved



Return address:
Natural and Protected Areas Program
4th flr. 9915 - 108 Street
Edmonton, Alberta
T5K 2C9

This newsletter is published quarterly by the Natural and Protected Areas Program of Alberta Forestry, Lands and Wildlife.

Coming Events

Edmonton Mycological Club

- Saturday, July 11, Shaw Lake Foray
- Sunday, July 12, Shaw Lake Foray
- Wednesday, August 5, 7:30 p.m. Monthly meeting
- Saturday, August 22, 9:30 a.m. Kilini Creek Foray
- Sunday, August 23, 9:30 a.m. Goldbar Park Foray
- Tuesday, August 29, Provincial Museum Display
- Wednesday, August 30, Provincial Museum Display
- Wednesday, September 2, 7:30 p.m. Monthly meeting
- Saturday, September 5, Hinton Foray
- Sunday, September 6, Hinton Foray
- Monday, September 7, Hinton Foray
- Friday, September 25, Valemont Foray
- Saturday, September 26, Valemont Foray
- Sunday, September 27, Valemont Foray

Contact Steve Davies 444-0538 or George Kinsman 434-3344 for more information

1992 Field Trips information taken from IRIS (Spring 1992) Alberta Native Plant Council's (ANPC) Newsletter

*** sponsored by Edmonton Plant Study Group

+++ sponsored by Calgary Field Naturalists' Society (CFNS)

July 9, Thurs. +++ **Sibbald Flats** Meet at MARKET MALL or at the Sibbald Lake day-use parking lot. Habitats: open meadow, a large slough, extensive willows and mature aspen forest.

July 12, Sun. +++ **Elbow Lake and Beyond** A natural history hike to Elbow Lake and beyond (in Kananaskis Country) with trip leader Jean Maudsley. The main theme is plant identification, but also birds, animals and anything that moves. For more information, call Jean Maudsley (285-6467, Calgary).

July 16, Thurs. +++ **Brown Lowery Natural Area** Meet at SOUTHCENTRE or at the parking lot at Brown Lowery. Habitats: spruce forest with aspen groves, willow and alder thickets, a lodgepole pine forest, and some open slopes.

July 23, Thurs. +++ **Aspen Parkland Biome, Canadian Wilds Project, Calgary Zoo** Meet at ALTADORE SAFEWAY or at 7:00 p.m. at the south gate to the zoo. The zoo will be closed, and parking will be at the administration building inside the zoo. Advance notice is required if you plan to bring your car. Ken Eadie, Curator of Plant Collections, will be our guide.

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July 24-26, Fri.-Sun. **Wild Flowers of Jasper National Park** Enjoy a weekend botanizing the high country with Elisabeth Beaubien, coordinator of the Alberta Wildflower Survey, and President of ANPC. Events include an evening slide show and 2 days viewing alpine wildflowers. \$195 with accommodation, \$110 without. For more information contact the Jasper Institute, Box 2337 Jasper, Alberta, 852-4012.

July 26, Sun. **Storm Creek, Kananaskis Country** Further information will be available at a later date.

July 30, Thurs. +++ **Nose Hill, Porcupine Valley** Meet at MARKET MALL or at the parking lot opposite Berkley Gate NW. Where undisturbed the open areas on the south side are dominated by rough fescue, with willow and aspen groves on the lower north-facing slopes. We often see squawroot, also known as yampa, here.

Aug. 6, Thurs. +++ **Tom Campbell Hill** Meet at ALTADORE SAFEWAY or on the east side of the zoo parking lot, of St. Georges Drive (the lot north of Memorial Drive). A lot of undisturbed prairie remains, but there are extensively disturbed areas as well, which the community (working with the Parks department) is going to reclaim. By this time, some of the reclamation work and perhaps a burn will have been done. Bryon Benn, who has researched and worked on planning for the area, will be the guide.

Aug. 16, Sun. *** **Dick Hilson's Nursery** This nursery has appeared in ANPC's source lists for native plant material. Meet at the Provincial Museum at 8:30 a.m. for the trip to Rochester, 1 1/4 hours north of Edmonton.

Aug. 30, Sun. +++ **Williams Coulee** Meet at SOUTHCENTRE at 9:00 a.m. or at the site. Phone in advance if you need a ride.

Sept. 20, Sun. +++ **Ptarmigan Cirque** Meet at MARKET MALL at 9:00 a.m. or meet at Highwood Pass parking Lot 10:00 - 10:30 a.m. Bring water and lunch and be prepared for a warm autumn day with golden larches, or alternatively a snowstorm. This is a short hike which gains elevation rapidly. Phone in advance if you need a ride. Plan to come back on your own if you want to be back before 6:00 p.m.

+++ Information for CFNS Trips:
Except as noted, meeting time is 6:30 p.m.

The CFNS trips are subject to change without notice, so if you have been out of touch, or want us to expect you, phone! Except as noted, the leader is Jim Posey; phone 560-2551. If no one has phoned, and no one comes to the first meeting place, the trip will be canceled. Prior arrangements are required only as noted.

